

REMARKS

This preliminary amendment is entered as a matter of right prior to examination of the above-identified continuation application. Claims 1-63 are pending for consideration.

Most of the claims presented herein were presented and considered in the parent application. Accordingly, Applicant will now respond to some outstanding issues which were raised as to the foregoing claims in the prosecution of the parent application. Applicant respectfully requests that these comments be taken into consideration and responded to in any Office Action issued on the present application.

With regard to the prior art, the claims 1-5, 41-44, 46-48, 50-52 and 60-66 previously rejected as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 4,943,032 to Zdeblick ("Zdeblick"); and claims 1-7 and 41-54 as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,578,843 to Garabedian et al. ("Garabedian"). These rejections are respectfully traversed for at least the following reasons.

Claims 1 and 46 have been amended herein to more clearly define over the teachings of the Zdeblick and Garaedian references.

Claim 41 recites:

A pressure sensor comprising:
a membrane integrally formed in a substrate by etching said substrate, wherein said membrane flexes in response to pressure;
a reference cavity covered by said membrane, said reference cavity containing a vacuum; and

an electrical connection to said membrane for measuring a piezo-resistivity of said membrane, said piezo-resistivity varying in accordance with the flexing of said membrane and said pressure.

Similarly, claim 50 recites:

A pressure sensor comprising:
a first means for deforming in response to pressure;
a reference cavity covered by said first means, said reference cavity containing a vacuum; and
means for measuring a piezo-resistivity of said first means, said piezo-resistivity varying in accordance with the deformation of said first means and said pressure.

In contrast, neither Zdeblick or Garabedian teach or suggest the claimed pressure sensor in which piezo-resistivity is monitored to determined pressure. In fact, neither Zdeblick or Garabedian even contain the term piezo-resistivity. This point was raised previously, but no official response has been made by the Office.

In previous prosecution, it was alleged that Zdeblick teaches the use of piezo-resistivity to measure pressure at col. 18, lines 52-56 and col. 19, lines 46-55. This is incorrect. Applicant has carefully reviewed these portions of Zdeblick and finds that neither even mentions piezo-resistivity and, clearly, there is no teaching of piezo-resistivity to measure pressure. Col. 18 mentions the formation of a resistive element, but not in connection with a pressure sensor based on piezo-resistivity. Col. 19 appears wholly irrelevant. Applicant requests that it be clearly explain how and where Zdeblick teaches the elements of claims 41 and 50 or that this rejection be reconsidered and withdrawn.

Garabedian is no better. With regard to claim 41, the Office Action cites col. 7, lines 49-62 of Garabedian. This section of Garabedian has been quoted above and discusses the formation of a capacitor, *not a resistor*. Nowhere does Garabedian teach or even remotely suggest the use of piezo-resistivity to monitor pressure as recited in claims 41 and 50.

In conclusion, previous prosecution has completely failed to explain how or where the cited prior art teaches the elements of claims 41 and 50 that use piezo-resistivity to measure

pressure. Moreover, Applicant has carefully reviewed the cited references and finds no suggestion of the subject matter of claims 41 and 50.

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. Consequently, the rejections based on Zdeblick and Garabedian of claims 41-45 and 50-52 should be reconsidered and withdrawn.

Claim 57 recites:

A pressure sensor comprising:
a first membrane that flexes in response to pressure;
a reference cavity covered by said first membrane, said reference cavity containing a vacuum; and
a second membrane adjacent to said first membrane;
wherein said reference cavity and said second membrane are disposed on opposite sides of said first membrane, said first and second membranes forming a capacitor having a capacitance that varies in accordance with the flexing of said first membrane and said pressure.

In contrast, however, Zdeblick fails to teach or suggest the features of claim 60. Zdeblick teaches a capacitor formed of two conductive films (668 and 666) ("capacitor plates 666 and 668," Zdeblick, col. 41, line 8). The lower film (666) is disposed on a flexible membrane (674). The conductive films (668, 666) are separated by an evacuated cavity (664).

Zdeblick does not teach or suggest that the "reference cavity and said second membrane are disposed on opposite sides of said [flexible] first membrane," as claimed. Rather, the reference cavity (664) and the other half of the capacitor ("membrane" 668) are both on the same side of the flexible membrane (666, 674).

Again, "[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051,

1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. Consequently, the rejection based on Zdeblick of claim 57 and its dependent claims should be reconsidered and withdrawn.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Steven L. Nichols', is written over a horizontal line.

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